
Abstract
Phosphatidylcholine (PC) is an important constituent of the gastrointestinal tract. PC molecules are not only important in intestinal cell membranes but also receiving increasing attention as protective agents in the gastrointestinal barrier. They are largely responsible for establishing the hydrophobic surface of the colon. Decreased phospholipids in colonic mucus could be linked to the pathogenesis of ulcerative colitis, a chronic inflammatory bowel disease. Clinical studies revealed that therapeutic addition of PC to the colonic mucus of these patients alleviated the inflammatory activity. This positive role is still elusive, however, we hypothesized that luminal PC has two possible functions: first, it is essential for surface hydrophobicity, and second, it is integrated into the plasma membrane of enterocytes and it modulates the signaling state of the mucosa. The membrane structure and lipid composition of cells is a regulatory component of the inflammatory signaling pathways. In this perspective, we will shortly summarize what is known about the localization and protective properties of PC in the colonic mucosa before turning to its evident medical importance. We will discuss how PC contributes to our understanding of the pathogenesis of ulcerative colitis and how reinforcing the luminal phospholipid monolayer can be used as a therapeutic concept in humans.